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United States
Environmental Protection
Agency

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Water Division

February 1990

EPA-10-AK-Chuitna-NPDES-90

Diamond Chuitna Coal Project

Final Environmental Impact Statement

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

REPLY TO
ATTN OF: WD-136

To All Interested Government Agencies, Public Officials. Public Groups, and Citizens

Pursuant to Section 102(2)(c) of the National Environmental Policy Act of 1969 and implementing Federal Regulations, the U.S. Environmental Protection Agency (EPA) has prepared this Final Environmental Impact Statement (FEIS) for the proposed Diamond Chuitna Coal Project. The project sponsor. Diamond Alaska Coal Company, proposes to develop a twelve million ton per year coal mine in the Beluga region of upper Cook Inlet, approximately 45 miles west of Anchorage, Alaska. The project would consist of an open pit mine and associated coal transportation and port facilities, service facilities, and housing accommodations.

Diamond Alaska Coal Company, in association with Granite Point Coal Port, Inc., and Tidewater Services Corporation, has applied to EPA for National Pollutant Discharge Elimination System (NPDES) permits to discharge pollutants from the mine, port, and housing facilities to navigable waters pursuant to the Clean Water Act. These facilities have been determined to be New Sources under Section 306 of the Clean Water Act and, according to Section 511(c)(1) of the Clean Water Act, are subject to the provisions of the National Environmental Policy Act. The draft NPDES permits were released for public review concurrently with the Draft Environmental Impact Statement (DEIS). Public comments on the draft NPDES permits have been considered, and the proposed final NPDES permits are included in this FEIS (Appendix D).

The U.S. Department of the Army, Corps of Engineers (Corps), and the State of Alaska Department of Natural Resources (DNR) are cooperating agencies for the environmental impact statement. The Corps, under the authority of Section 10 of the River and Harbor Act of 1899 and Section 404 of the Clean Water Act, will evaluate proposed project-related activities in waters of the United States. Appendix C of this FEIS contains a complete description of the proposed activities requiring Corps authorization. The DNR is authorized to review, pursuant to the Alaska Surface Coal Mining Control and Reclamation Act (AS27.21, 11 AAC Ch. 90). Diamond Alaska Coal Company's detailed application for a permit to conduct surface mining. This permit application was the subject of a separate state review and approval process, which was completed on August 21, 1987.

EPA will announce the availability of this document in the Federal Register on the date indicated below, initiating a 30-day review period. Address all comments to:

Rick Seaborne
EIS Project Officer
Environmental Protection Agency
Environmental Evaluation Branch, M/S WD-136
1200 6th Avenue
Seattle, Washington 98101

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Federal Register Notice of
Availability of FEIS: February 2, 1990

Deadline for comments on FEIS: March 5, 1990

FINAL

ENVIRONMENTAL IMPACT STATEMENT

DIAMOND CHUITNA COAL PROJECT

Prepared By

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION 10

Cooperating Agencies

U.S. Department of the Army
Corps of Engineers

Alaska Department of Natural Resources

With Technical Assistance From

Dames & Moore

RESPONSIBLE OFFICIAL:

Robie G. Russell
Regional Administrator
Environmental Protection Agency
Region 10

Date: December 1, 1989

COVER SHEET

FINAL ENVIRONMENTAL IMPACT STATEMENT (FEIS)
DIAMOND CHUITNA COAL PROJECT
SOUTHCENTRAL ALASKA

Lead Agency: U.S. Environmental Protection Agency (EPA)

Responsible Official: Robie G. Russell
Regional Administrator
Environmental Protection Agency
1200 Sixth Avenue
Seattle, Washington 98101

Cooperating Agencies: U.S. Army Corps of Engineers (Corps)
Alaska Department of Natural Resources (DNR)

Abstract of FEIS

The actions to be considered are the approvals of federal permits for the proposed Diamond Chuitna Coal Project located on the west side of Cook Inlet in southcentral Alaska. The project would consist of a surface coal mine, haul road, a method of transporting coal to a port facility on Cook Inlet, dock facilities, and other ancillary facilities. Three action alternatives and a no action alternative are discussed in detail. Rationale for eliminating various options is given. The preferred alternative would include construction of a port site at Ladd, an eastern transportation corridor, development of a housing facility at Lone Creek, and a conveyor system which would parallel the haul road and transport coal to the port site. The impacts of the proposed project are considered in terms of vegetation, fish, wildlife, wetlands, water quality and hydrology (both surface and subsurface), physical and chemical oceanography, air quality, visual resources, cultural resources, subsistence, socioeconomics, recreation, technical feasibility, and future uses of facilities.

Public Review Process

This FEIS is offered for review to members of the public, interested groups, and public agencies. Public hearings were held in August of 1988 in Anchorage. Tyonek, and Soldotna. Alaska, to solicit comments on the Draft Environmental Impact Statement (DEIS), issued July 15, 1988, the draft EPA National Pollutant Discharge Elimination System (NPDES) permits, and the Corps authorized activities. Comments received on the DEIS and permits are addressed in this FEIS. Comments received on this FEIS will be considered in the EPA and Corps Records of Decision for this project.

Location of FEIS or Technical and Reference Reports and Appendices

Copies of this FEIS and/or the major reports relating to the Diamond Chuitna Coal Project EIS are available for review at the following locations:

Seattle

Environmental Protection Agency
Environmental Evaluation Branch
1200 Sixth Avenue, WD-136
Seattle, WA 98101

Anchorage

Dames & Moore
5761 Silverado Way, Bldg. P
Anchorage, AK 99518

Alaska Dept. of Natural Resources
Division of Mining
Eighth Floor
3601 'C' Street (Frontier Bldg.)
P.O. Box 107016
Anchorage, AK 99510

Diamond Alaska Coal Company
1227 West Ninth Ave., Suite 201
Anchorage, AK 99501

Z. J. Loussac Library
3600 Denali St.
Anchorage, AK 99503

Kenai Peninsula Borough

Kenai Peninsula Borough*
Resource Development Dept
147 N. Binkley
Soldotna, AK 99669

Kenai Community Library**
163 Main Street Loop
Kenai, AK 99611

Tyonek Community Center**
Tyonek, AK 99682

Deadline for comments: March 5, 1990

Address all comments to:

Rick Seaborne
EIS Project Officer
Environmental Protection Agency
Environmental Evaluation Branch (WD-136)
1200 Sixth Avenue
Seattle, WA 98101
(206) 442-8510

Additional copies of the FEIS may also be obtained by contacting the EIS Project Officer.

* 27 volume permit application only.

**All reports except permit application.

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SUMMARY

Purpose of and Need for Actiog

Diamond Alaska Coal Company (Diamond Alaska) proposes to develop a coal mine in the Beluga region of upper Cook Inlet, Alaska. The project would consist of a surface mine and associated transportation, shipping, and housing facilities. Diamond Alaska is proceeding with applications for the various permits and approvals needed for such a development.

The U.S. Environmental Protection Agency (EPA) has the responsibility for issuing New Source National Pollutant Discharge Elimination System (NPDES) Permits for wastewater discharges from the proposed Diamond Chuitna Coal project. EPA's NPDES regulations [40 CFR 122.29(c)(2)] require that the Environmental Impact Statement (EIS) include a recommendation on whether the NPDES Permit should be issued or denied. They also require that such action shall occur only after a complete evaluation of the projected impacts and recommendations contained in the final EIS (FEIS) [40 CFR 122.29(c)(3)]. EPA recommends the issuance of the NPDES permits for this proposed project with conditions. The conditions are described in the proposed final NPDES permits and fact sheets included in Appendix D of this FEIS.

In addition, the U.S. Department of the Army Corps of Engineers (Corps), Alaska District, has jurisdiction over this action under Section 10 of the River and Harbor Act of 1899 which provides for control over structures or work in or affecting navigable waters of the U.S.; and under Section 404 of the Clean Water Act which provides for regulation of the discharge of dredged or fill material into U.S. waters, including wetlands. The Corps intends to adopt this EIS to fulfill its National Environmental Policy Act (NEPA) obligations if its concerns are satisfied in the document.

Pursuant to NEPA and implementing regulations issued by the Council on Environmental Quality (CEQ), EPA, and the Corps, this EIS has been prepared to evaluate the potential impacts of the proposed actions on the environment and to fulfill the permitting requirements of EPA and the Corps. EPA has the lead responsibility for preparing this document and the Corps is a cooperating agency. The Alaska Department of Natural Resources (DNR) is also a cooperating agency because of its role in implementing the federal Surface Mining Control and Reclamation Act (SMCRA) through the Alaska Surface Coal Mining Program.

Project Description

Full development of the Diamond Chuitna coal project would involve a 10.9 million Mt (12 million short ton) per year surface coal mine in the Beluga area approximately 72 km (45 mi) west of Anchorage. The coal is sub-bituminous, low sulphur, low ash, high moisture steam coal with an average of 4,250 kilocalories per kilogram (7650 BTU per lb). The actual area to be mined during the projected 34-year life of the project would be approximately 2,029 ha (5,014 ac) with a maximum of 182 ha (450 ac) of pit being open at any one time.

Mining methods would employ shovels, draglines, hydraulic backhoes, front-end loaders, and haul trucks. Coal would be initially crushed at the mine and carried to a 22 ha (55 ac) mine service area by conveyor for further crushing and weighing. It would then be transported approximately 17.6 km (11 mi) by a single-span, 1.2 m (48 in) wide conventional conveyor to a port site on Cook Inlet either at Granite Point south of the mine or at Ladd east of the mine.

The entire conveyor structure would be supported by a horizontal steel pipe elevated about 0.6 m (2 ft) above the ground and would be about 2.9 m (9.6 ft) high overall. It would be enclosed on the top and one side except at stream crossings where the underside would also be enclosed. At appropriate locations, the conveyor would be raised or buried to permit human and large mammal passage across the corridor. The conveyor would be paralleled by a light duty maintenance road and an all-weather gravel/access haul road.

The onshore port facilities would occupy approximately 104 ha (260 ac) on the bluff above Cook Inlet at either Granite Point or Ladd. No one would be housed there. Up to 1.1 million Mt (1.2 million short tons) of coal would be stockpiled at the port for shipment. At full production, the offshore port facility would consist of an elevated trestle up to 3,810 m (12,500 ft) long, depending upon the port site, and would support twin conveyors for loading coal ships. At maximum length, the trestle would have a berthing depth of between 15.2 and 18.2 m (50 and 60 ft) and could service ships up to 108,864 Mt (120,000 dwt).

The workforce would be housed in permanent single-status housing and community facilities on an 8 ha (20 ac) site north of the Chuitna River near the mine (Lone Creek site), south of the Chuitna River midway between the mine and Granite Point (Congahbuna site), or northeast of the mine site (Threemile Creek site). The facilities would accommodate a total of 540 people at full production. A new gravel airstrip with a main runway of 1,524 m (5,000 ft) would be constructed adjacent to the housing site.

Average-load electrical power demands would be approximately 35 Mw with a maximum of 50 Mw. Power would be purchased from the existing Chugach Electric Association natural gas generating station at Beluga. Water for all facilities would be supplied by wells.

Construction employment would peak at approximately 1,300 and the permanent work force would total about 848 workers. Half of that total (424) would be at the project site at any one time working two 11-hour shifts per day. Employees would work a four-day-on, four-day-off schedule, and would be flown back to their homes in Anchorage or on the Kenai Peninsula during their off-work periods.

Construction would take approximately three years. Production would begin at a level of about 1.8 million Mt (2 million short tons) and increase to full production capacity as economics permit. The minimum time to full production would be four years from construction completion.

Existing Environment

The project area is largely undeveloped except for a system of primitive roadways that remain as a result of past oil, logging, and coal exploration activities. Most of the project area, including all the Diamond Chuitna coal lease area, is state land as is the Trading Bay State Game Refuge to the south. Most of the land east of the project area is owned or selected by the Tyonek Native Corporation, while Cook Inlet Region, Inc. owns the majority of the remainder of the land on the northeast, north, and west. The Kenai Peninsula Borough has either selected or received selection approval to land at or near both potential port sites.

Most of the project area consists of a broad, gently sloping plateau characterized by irregular ridges and depressions. The southern edge of the plateau terminates at a coastal bluff rising from the gravelly beaches of Cook Inlet. Much of the area is poorly drained with bogs and ponds. Vegetation on the area consists primarily of spruce-birch forest intermixed with open, muskeg terrain.

A major portion of the area provides moderate to high quality habitat for moose, brown bear, and black bear. A portion of a moose rutting concentration area is located within the northern half of the mine site; moose winter in a narrow zone along the coast. Birds occupying the project area include bald eagles, as well as small numbers of trumpeter swans and sandhill cranes.

The Chuitna River, which originates in the Alaska Range and enters Cook Inlet north of the village of Tyonek, bisects the project area and is the major drainage system within the project area. Several major tributaries to the Chuitna River are within or adjacent to the proposed mine area. Ground water originating within shallow aquifers in the mine area contributes significantly to the flow of the area streams. Tyonek and Old Tyonek Creeks are separate systems that drain the southern portion of the project area. Water resources are unpolluted and water quality is high.

Important fish resources in the Chuitna River include rainbow trout, chinook, coho, pink, and chum salmon. The river supports a small but high quality sport fishery and contributes salmon to commercial and subsistence fisheries within Cook Inlet.

Cook Inlet adjacent to the project area is characterized by high tides, strong currents, and high turbidity. Important marine life occupying the coastal area includes belukha whales and all 5 species of eastern Pacific salmon.

Air quality is high within the project area; noise pollution is low.

The closest development to the project area is the village of Tyonek, about 11 miles southeast of the mine area. About 95 percent of the approximately 270 residents of Tyonek are Alaska Natives. The village is accessible only by air or sea as there are no road connections to the more populated areas of southcentral Alaska. Subsistence hunting and fishing are important to the economic, cultural, social, and nutritional well-being of most of the permanent residents within the area.

Scoping

The EIS scoping process identified the following 10 issues of concern for the project:

- Maintain the integrity of the Chuitna River watershed by minimizing impacts to water quality and maintaining proper flows
- Maintain the quality of fish habitats in the Chuitna River system and minimize impacts to resident and anadromous fish
- Minimize disruption of wildlife and wildlife habitats, including important seasonal use areas and migration routes

- Assure successful reclamation of project components

  Minimize impacts to the commercial set net fishery and marine life movements near the port trestle

- Minimize impactsto subsistence resources, including access to those resources, as traditionally used by local residents

- Minimize the social, cultural, and economic impacts on local residents

  Maintain a regional perspective to minimize the cumulative impacts of this and other potential development projects

  Minimize chances of system failure by incorporating technically feasible component siting, design, and mitigation features

  Component siting, design, and mitigation features should be cost effective

Options Screeninu Process

To address the 10 issues, the scoping process identified 31 options for the 12 project components. A two-step options screening process was conducted to determine reasonable options. In the first step, all options were reviewed to eliminate from further consideration those which were clearly unreasonable or infeasible primarily for environmental or technical reasons. Nine options were eliminated.

In the second step, the remaining options were individually evaluated. Since all the options in the applicant's Proposed Project were environmentally and technically reasonable and feasible, all of those options were retained so that the applicant's Proposed Project would constitute a formal alternative to be analyzed during the analysis of alternatives process. Then, for each component where at least one option other than the applicant's choices remained, options were individually evaluated from the perspective of each resource or technical discipline (e.g., water quality, subsistence, technical feasibility). If it was determined that one of the other options was as good as, or better than, an applicant's option on an overall basis or if it addressed one or more of the 10 scoping issues in a significantly more favorable manner than did the applicant's option, that option was retained for the analysis of alternatives process.

Following the options screening process, the best options for all but two of the project components were relatively easy to identify. However, two components (transportation corridor/port site location and housing site location) had three options each that adequately addressed one or more of the 10 issues. These options were therefore retained and, with the other nine options, were used to form the alternatives (Table 1).

Identification and Description of Alternatives

The identification of action alternatives process was relatively straightforward as only three alternatives (combinations of options) were necessary to address the issues raised by the two components with more than one option remaining (transportation/port site location and housing site location). The applicant wishes to retain two transportation corridor/port site options (southern/Granite Point and northern/Ladd). Two alternatives using these options were identified as the applicant's Proposed Project. The applicants' proposal entails development of only one of these transportation corridors. The haul road and conveyor would both be constructed within the same corridor leading to the associated port site (either Ladd or Granite Point). A third alternative, using the eastern/Ladd option, was also identified. The three action alternatives and the No Action Alternative for the Diamond Chuitna coal project are described below.

Southern/Granite Point Alternative

In addition to the fixed mine and mine service area locations, this alternative would site the overburden stockpile southeast of the mining limit. It includes a conveyor system within the southern transportation corridor to the port site at Granite Point. The coal-loading facility at the port would be an elevated trestle. A single-status housing facility with associated new airstrip would be located at the Lone Creek site. Water would be supplied to all facilities by wells, and power would be purchased from the Chugach Electric Association natural gas power station at Beluga.

Northern/Ladd Alternative

This alternative is the same as the southern/Granite Point alternative except the northern transportation corridor to a port site at Ladd would be used (Fig. 2-1).

Table 1

OPTIONS USED TO FORM ALTERNATIVES

component[1]	Option(s)
Mine Location	Fixed
Overburden Stockpile Location	Southeast
Mine Service Area	Fixed
Transportation System	
o Corridor Location[2]	Southern/Granite Point Northern/Ladd Eastern/Ladd
o Mode	Conveyor
Loading Facility	Elevated Trestle
Housing	
o Location(2)	Lone Creek Congahbuna Threemile Creek
o Type	Single Status
Airstrip	New
Water Supply	Wells
Power	Purchase

(1) One of original 12 components was dropped during option screening process.

(2) Component with more than one option remaining.

Eastern/Ladd Alternative

This alternative would be the same as the northern/Ladd alternative except that the eastern transportation corridor to a port site at Ladd would be used (Fig. 2-1).

No Action Alternative

The No Action Alternative means that development of the Diamond Chuitna project would not occur. This would result from denial of one or more of the federal or state permits necessary for project development or from a decision by the applicant not to undertake the project.

Comparison of Alternatives

The impacts of each of the three action alternatives were compared against the 10 issue criteria identified during the scoping process. Then the impacts of each alternative relative to one another (Table 2) were compared for identification of the preferred alternative. The Congahbuna and Threemile housing/airstrip options were then compared with the Lone Creek option to determine whether either option provided a significant advantage over the Lone Creek site such that it could substitute for the Lone Creek option in one or more of the alternatives.

Identification of Preferred Alternative

The eastern/Ladd alternative, using the Lone Creek housing site, had the least overall relative total impact value and was identified as the preferred alternative. Whether the applicant could develop an eastern corridor, however, is not certain since the corridor would cross private land owned by Tyonek Native Corporation. To date, the applicant has been unable to negotiate a right-of-way across that land.

Environmental Consequences of the Preferred Alternative

Overall environmental consequences of the entire project would be similar regardless of which corridor alternative is developed. At maximum mine extent, project components would disturb about 2,029 ha (5,014 ac) of vegetated terrain. However, because of the ongoing reclamation of mined out areas, the actual unvegetated surface area at any one time in the mine life would be substantially less. About 24 percent of the area to be disturbed is classified as wetland.

TABLE 2

EVALUATION CRITERIA MATRIX SHOWING RELATIVE[a] TOTAL IMPACT VALUES ASSIGNED TO THE THREE ACTION ALTERNATIVES

	Evaluation Criteria	Southern/ Granite Pt.	Northern/ Ladd	Eastern/ Ladd
1.	Minimize risk of water quality degradation and alteration to flows	Moderate	Moderate	Low
2.	Minimize impacts to fish and fish habitat	Moderate	Moderate	Low
3.	Minimize impacts to wildlife and wildlife habitats	Moderate	High	Low
4.	Minimize potential reclamation problems	Low	Low	Low
5.	Minimize impacts to set net fishery	Moderate	High	High
6.	Minimize impacts to traditional subsistence harvest activities	High	LOW	Low
7.	Minimize social, cultural, and economic impact upon local residents	Moderate	Moderate	Low
8.	Minimize cumulative regional use impacts	Low	Moderate	Moderate
9.	Minimize technical complexity	Low	LOW	Low
10.	Minimize cost	No Data	No Data	No Data

[a] "High", "moderate", and "low" are comparative among the three corridor options, not absolute values of potential environmental impacts.

Wildlife impacts would include loss of habitat during the mine life and for a period thereafter. Moose, brown bear, and black bear would be affected, as well as small mammals and birds. Loss of moose winter range at the proposed port site and a portion of a rutting area in the mine vicinity would be among the more important impacts. Movement of large mammals would be partially impeded by the conveyor system, although the presence of wildlife crossing areas would assure access across the transportation corridor. Reclamation of disturbed terrain would return wildlife values in the long term to near the premining condition.

Water quality and hydrology of Chuitna River tributaries within and adjacent to the mine site would be significantly altered during mine operation, for a period thereafter, and possibly over the long term depending on postmining hydrological characteristics and on the success of stream reclamation. Impacts would include increased suspended solids concentrations, higher turbidity, and reduced flow in some stream segments. A substantial portion of one tributary would be mined through causing direct habitat loss.

Loss of fish productivity, including such key species as chinook and coho salmon, would occur during mine operation and for a period thereafter. It is questionable whether **mined-**through streams could be returned to premining productivity; **therefore**, fish productivity loss could be a long term impact. Loss in productivity would have a small adverse impact on the Chuitna River sport fishery and a very small effect on commercial and subsistence fisheries in the marine environment.

Air quality would be degraded only locally with no significant impact to populated areas.

Socioeconomic impacts to the Anchorage and Kenai Peninsula population centers would be minor or insignificant. Tyonek residents would receive both beneficial and adverse impacts from the project. Increased employment opportunities and village income would be potential benefits while the increased development and human intrusion into the area would likely cause disruption to traditional Native lifestyles and loss of subsistence hunting. and fishing opportunities.

Chapter 1.0

Purpose of and Need for Action

1.0 PURPOSE OF AND NEED FOR ACTION

1.1 INTRODUCTION

1.1.1 The EIS Process

The National Environmental Policy Act (NEPA) of 1969 requires the preparation of an Environmental Impact Statement (EIS) whenever a proposed major federal action could significantly affect the quality of the human environment. Large development projects, such as the Diamond Chuitna Coal Project, normally require permits from one or more federal agencies. The issuance of these permits can be considered a major federal action if the range of anticipated impacts is of sufficient magnitude to potentially create significant effects. The agency or agencies involved make a determination regarding significant impacts and can elect to prepare the EIS if needed. The agency can either prepare the EIS itself or contract the preparation of all or part of the document (under the agency's supervision).

The NEPA regulations which outline the purpose, requirements, and procedures for the EIS process may be found in the Code of Federal Regulations at 40 CFR Parts 1500 to 1508. NEPA regulations also require that the EIS address, to the fullest extent possible, state and local planning requirements in addition to the federal permitting actions. An EIS provides an information base which assists state and local agencies in addressing their permitting and other regulatory actions.

The primary purpose of the EIS process is to ensure that environmental information is available to public officials and citizens before permit decisions are made and before actions are taken. The process must encourage and facilitate public involvement in the decisions affecting the quality of the human environment.

"Scoping" is the first step of the EIS process. The purpose of the scoping process is to provide an opportunity for members of the public, interest groups, and agencies to assist in defining the significant environmental issues related to the proposed project. Once these specific issues are identified, they are described in a document called the Responsiveness Summary that is distributed to all interested agencies and parties. These issues form the primary basis for determining the range of alternatives considered in the EIS.

Following scoping, the lead agency or agencies must ensure that sufficient environmental information is available to adequately address the significant issues raised during the scoping process. Alternative means of achieving the proposed project's objectives are developed and the environmental impacts are studied and compared. Finally, the EIS document is prepared and distributed to the public in draft form (DEIS) for a minimum of 45 days for formal review. During this period, public hearings or meetings are held to discuss the DEIS and to receive comments. Submission of written comments is also encouraged.

Comments are evaluated following public review and the DEIS is changed accordingly. All written comments received during the review period are either reproduced in the final EIS (FEIS) or summarized (depending on the number of comments) and the points raised are individually addressed in that document. The FEIS is then distributed for another public review period raised are individually addressed in that document. The FEIS is then distributed for another public review period of at least 30 days before any decisions about the project can be implemented. This is to allow for additional public comments on the FEIS.

Once a permit decision has been made, a formal public record of decision is prepared by each permitting federal agency. The Record of Decision (ROD) states what major permit decision was made, identifies all alternatives considered (including those considered environmentally preferable), and may discuss preference among alternatives based on factors such as economic, technical, national policy and agency mission considerations. The ROD also states what means to avoid or minimize environmental harm were adopted and the rationale.

1.1.2 EIS Document Structure

The basic format for an EIS is prescribed by the NEPA regulations. Each section has a specific purpose and often is required to include certain kinds of information. Following is a brief description of the major sections of this EIS.

Summary - A summary of the EIS stressing major conclusions, areas of controversy, and the issues to be resolved is presented in this section.

- Purpose of and Need for Action - This chapter (1.0) specifies the underlying purpose of the action for which the EIS is being written and why the action is needed.

  The Proposed Project - This chapter (2.0) describes the individual components of the project as proposed by the applicant and the specific options being considered for each component. It tells how the project will be developed and describes the mitigation plan included in the project proposal for all project components.

Alternatives Includina the Proposed Action - Chapter 3.0 is the heart of the EIS. It describes all the initial options that were considered for the project, why many of them were eliminated, and how the final options and alternatives (set of options comprising a total project) were selected. Then, based on the information and analyses presented in the chapters that follow (Affected Environment and Environmental Consequences), the chapter presents the environmental impacts of the proposed project alternatives in comparative form, sharply defining the issues and providing a clear bases for choice by the decision-makers and the public. It also identifies and describes the preferred alternative.

- Affected Environment - Chapter 4.0 succinctly describes the existing environment of the area which would be affected by development of the project. It explains that environment as it currently exists before project development begins.

Environmental Conseauences - This chapter (5.0) forms the scientific and analytic basis for the comparison of alternatives in Chapter 3.0. It details the potential environmental impacts which could be expected for each alternative. In addition, it describes unavoidable impacts, discusses any irreversible or irretrievable commitments of resources, and describes the relationship between short- and long-term productivity.

- Mitigation, Reclamation & Mo to - Chapter 6.0 summarizes th detailed mitigation and reclamation requirements imposed by the State of Alaska through the Alaska Surface Coal Mining Program and the other state permitting programs; requirements of federal and local permitting programs; and other measures which could be considered by the permitting agencies.

- Consultation and Coordination - This chapter (7.0) describes the process for soliciting input from agencies and the public and how the process is coordinated with the agencies' permitting processes.

Public Response to the DEIS - Chapter 10.0 includes a response to comments received during the DEIS review, both at public hearings and written comments. Responses indicate how the final document was changed or why no changes were made.

- Appendices - These sections incorporate important supplementary material prepared in connection with the EIS which is more appropriately presented separately from the body of the document.

1.2 DESCRIPTION OF THE PROPOSED ADMINISTRATIVE ACTIONS

This section describes the proposed federal administrative actions that have created the need for this EIS.

Diamond Alaska Coal Company (Diamond Alaska) proposes to develop a 10.9 million Mt (12 million short tons) per year coal mine in the Beluga region of upper Cook Inlet, Alaska. The project would consist of a surface mine and associated transportation, shipping, and housing facilities. Diamond Alaska has initiated the process of applying for the various permits and approvals needed for such a development.

The U.S. Environmental Protection Agency (EPA) has been considering the issuance of New Source National Pollutant Discharge Elimination System (NPDES) Permits for wastewater discharges from the proposed Diamond Chuitna Coal Project. In addition, the U.S. Department of the Army Corps of Engineers (Corps), Alaska District, has jurisdiction over this action under Section 10 of the River and Harbor Act of 1899 which provides for control over structures or work in or affecting navigable waters of the U.S.; and under Section 404 of the Clean Water Act which provides for regulation of the discharge of dredged or fill material into U.S. waters, including wetlands. Action by the Corps could result in denial of the permit, issuance of the permit, or issuance of the permit with stipulations. The Corps intends to adopt this EIS to fulfill its NEPA obligations if its concerns are satisfied in the document.

EPA's NPDES regulations [40 CFR 122.29(c)(2)] require that the EIS include a recommendation on whether the NPDES Permit should be issued or denied. They also require that such action shall occur only after a complete evaluation of the projected impacts and recommendations contained in the final EIS (FEIS)[40 CFR 122.29(c)(3)]. EPA recommends the issuance of NPDES permits with conditions for this proposed final NPDES permits and fact sheets included in Appendix D of this FEIS.

Pursuant to NEPA and implementing regulations issued by the council on Environmental Quality (CEQ), EPA, and the Corps, this EIS has been prepared to evaluate the potential impacts of the proposed actions on the environment and to fulfill the permitting requirements of EPA and the Corps. EPA has the lead responsibility for preparing this document and the Corps is a cooperating agency. The Alaska Department of Natural Resources is also a cooperating agency because of its role in implementing the federal Surface Mining Control and Reclamation Act through the Alaska Surface Coal Mining Program (see Section 1.5).

1.3 PROJECT LOCATION, HISTORY, AND STATUS

The proposed project would be located on the northwest side of upper Cook Inlet, approximately 72 km (45 mi) west of Anchorage and 12.8 km (8 mi) west of the Native community of Tyonek (Figure 1-1). The area is bounded by the Beluga River on the north, the Alaska Range on the west, the flats of Trading Bay State Game Refuge on the southwest, and Cook Inlet on the south and east.

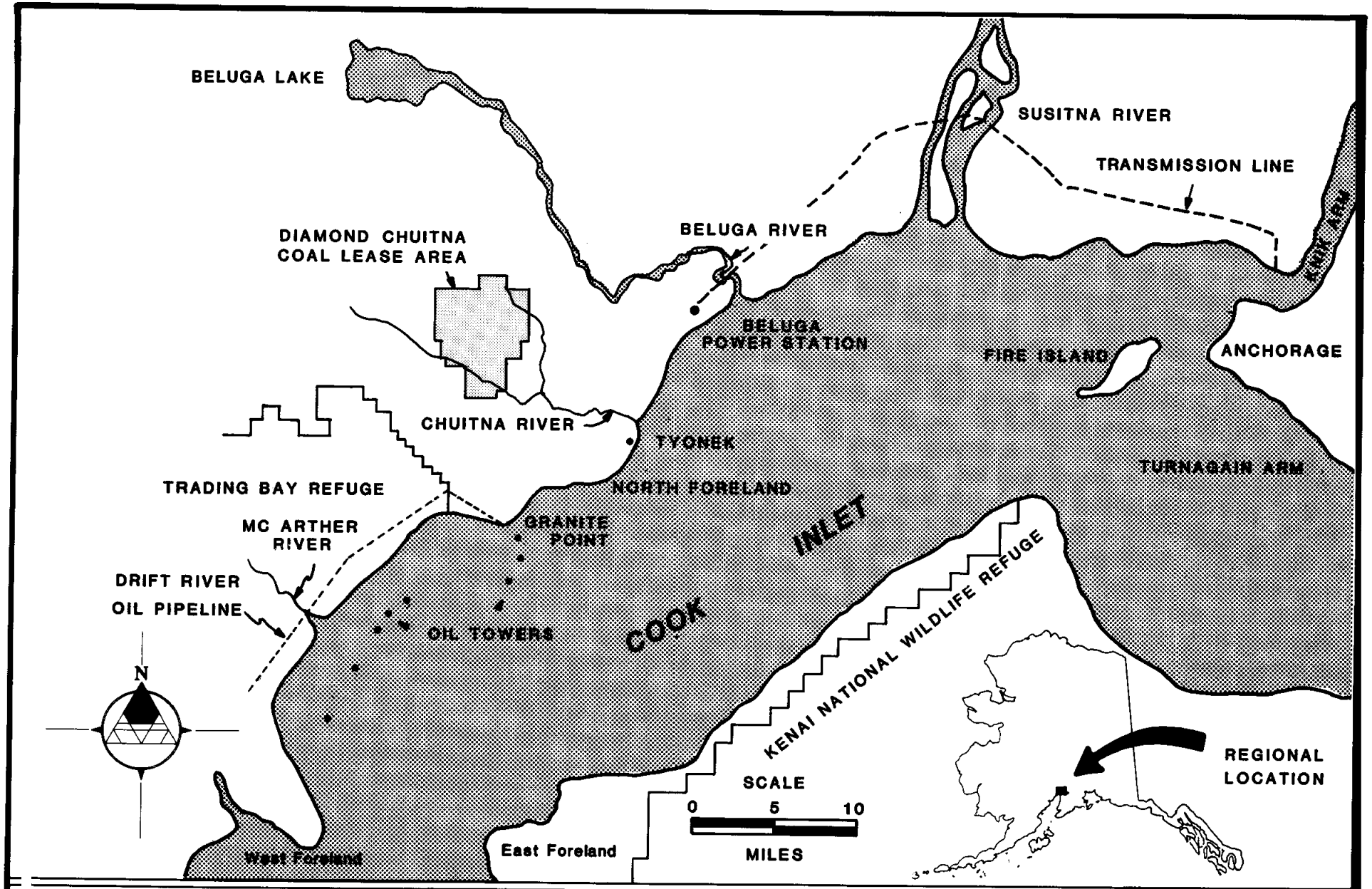
The mine would be situated north of the Chuitna River at an elevation of approximately 229 m (750 ft) and would be 19.2 km (12 mi) from tidewater at Granite Point (Figure 1-2). Topography of the project area consists of gently undulating hills and ridges at the mine site interspread with small streams, ponds, and muskegs, becoming flatter south of the Chuitna River as elevation slowly decreases toward Granite Point. Mixed coniferous and deciduous forests and woodlands extend over most of the project area.

The presence of coal outcrops in the Beluga region of upper Cook Inlet has been known for decades. The area containing these outcrops was selected soon after statehood by the State of Alaska under the federal government's mental health land grant entitlement. The five coal leases affected by the proposed project were issued by the State to the Bass, Hunt, Wilson Group between 1972 and 1978. Coal leases in the area have also been issued to other companies.

Throughout the 1970's, further exploration occurred on the leases, including core drilling to define the reserves. In 1981, the Diamond Shamrock Chuitna Coal Joint Venture was formed to develop the project. The venture partners are Maxus Energy Corporation, a large integrated natural resources company, and the Lone Creek Coal Company. The operating arm of the joint venture is Diamond Alaska Coal Company of Anchorage, a subsidiary of Maxus Energy Corporation. The joint venture holds sublease agreements to the five leases (ADL nos. 36911, 36913, 36914, 37002, and 59502) which constitute the entire lease area.

Diamond Alaska has overseen an intensified drilling program and the completion of many engineering and economic studies, which included a detailed Preliminary Design Phase study. Environmental baseline studies were begun in 1982 and largely completed in 1984. Limited preconstruction monitoring has also begun.

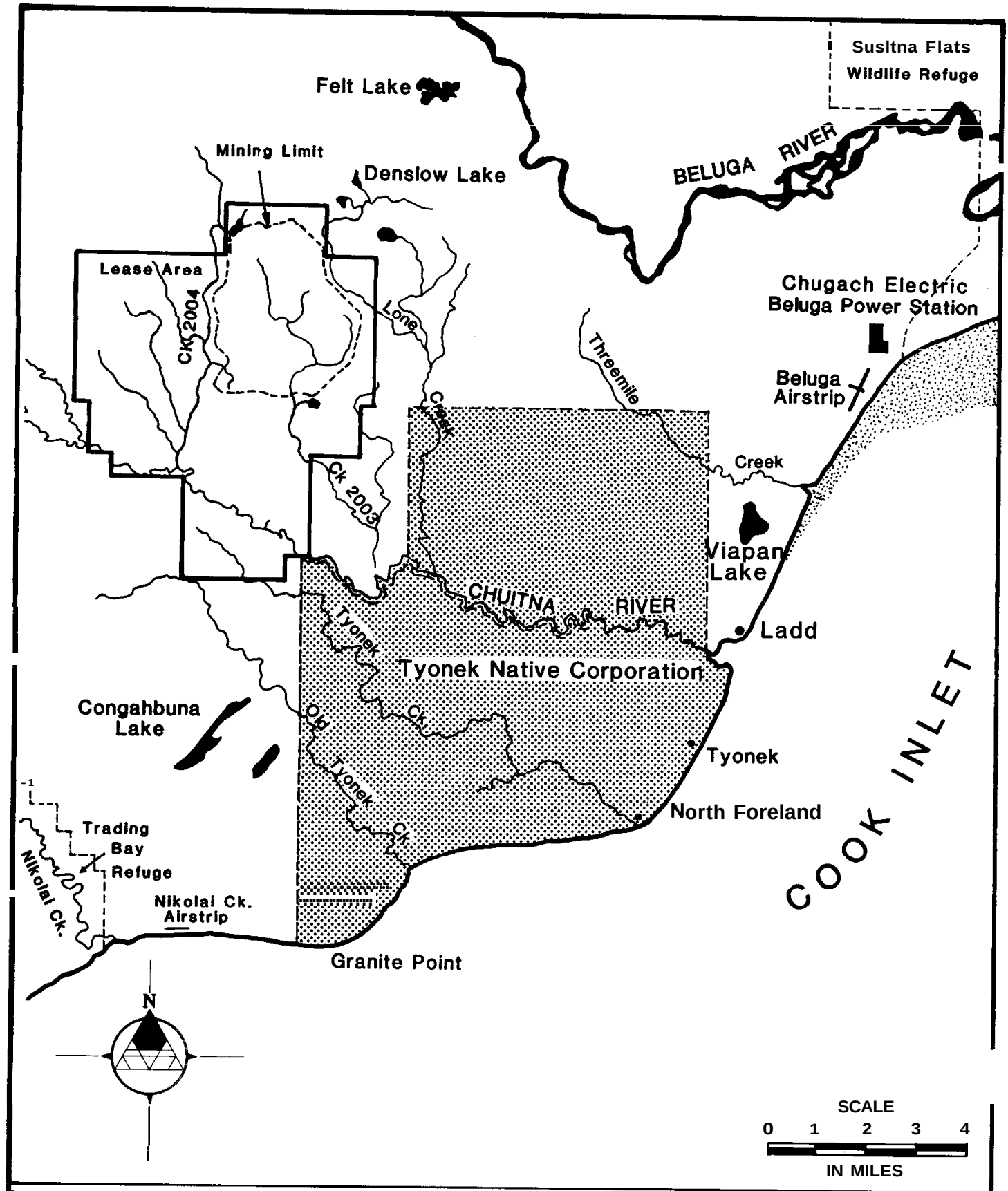
The coal is sub-bituminous, low sulphur, low ash, high moisture steam coal with an average of 4,250 kilocalories per kilogram (7,650 BTU per pound). Diamond Alaska has been marketing the coal to electric utilities, cement, and industrial users in the Pacific states of the United States and to Pacific rim countries, primarily Japan, Taiwan, and Korea.



DIAMOND CHUITNA PROJECT LOCATION

Diamond Chuitna Environmental Impact Statement

FIGURE 1–1



DIAMOND CHUITNA PROJECT AREA

Diamond Chuitna Environmental Impact Statement | FIGURE 1-2

1.4 SCOPING ISSUES

During the scoping process, which involved the full participation of Diamond Alaska, members of the public, special interest groups, and agencies involved in the EIS process, the following 10 issues were identified as being of major concern if the project is developed:

Issue 1: Maintain the integrity of the Chuitna River watershed by minimizing impacts to water quality and maintaining proper flows

The proposed project has the potential to alter the characteristics of the Chuitna River watershed in a number of ways:

Direct disturbance of stream courses in mined areas

Interruption or diversion of groundwater regimes which could alter input to surface drainages

Diversion of surface water flow from one subbasin to another

Degradation of water quality as a result of sediment load from disturbed areas, chemical leaching from coal or overburden, or pollution from sanitary facilities

Issue 2: Maintain the quality of fish habitats in the Chuitna River system and minimize impacts to resident and anadromous fish

Fish habitats could be affected by direct disturbance of stream courses, reduced flows, or water quality degradation.

Issue 3: Minimize disruption of wildlife and wildlife habitats, including important seasonal use and migration areas

The proposed project has the potential to alter the nature and productivity of wildlife habitats and to impede the movements of wildlife.

Issue 4: Assure successful reclamation of project components

The surface mine and other components of the proposed project would temporarily disturb substantial areas of vegetated terrain and existing stream courses. Returning these disturbed areas to a biologically productive condition is a significant concern.

Issue 5: Minimize impacts to the commercial set net fishery human user and marine life movements near the wort trestle

The existence of port facilities would have the potential to impede various coastal activities engaged in by humans and to alter the movement of fish and marine mammals.

Issue 6: Minimize imwacts to subsistence resources, including access to those resources, as traditionally used by local residents

Hunting, fishing, and trapping activities required by local residents for their subsistence could be affected by either reduced numbers of fish and wildlife in existing use areas or by restricted access to traditional use areas.

Issue 7: Minimize the social, cultural, and economic imwacts on local residents

Development of the proposed mine and its housing and transportation infrastructure could affect the lifestyles and livelihoods of local residents, particularly residents of Tyonek.

Issue 8: Maintain a regional perspective to minimize the cumulative imwacts of this and other potential development wroiects

Facilities developed for the proposed project could influence the future development of the area and the extent of cumulative impacts. Therefore, a regional perspective for facility planning should be employed to minimize the range of cumulative impacts that could occur.

Issue 9: Minimize chances of system failure by incorporating technically feasible component siting, desisn, and mitigation features

If components or mitigation measures become too complex or utilize uncertain technology, then an increased risk of failure could result.

Issue 10: Comwonent siting, desisn, and mitigation features should be cost effective

If project costs exceed reasonable or practical limits, economic feasibility could become an issue.

1.5 STATUS OR PERMITS AND APPROVALS

One of the purposes of the EIS process is to address the environmental and other concerns of federal, state, and local

agencies responsible for various regulatory functions associated with ultimate approval of a project. The EIS process recognizes the informational needs of these agencies as they proceed through their permitting processes and seeks to incorporate relevant information to assist these agencies in their permitting decisions. The public hearings, which are an integral part of the EIS process and cover all concerns pertinent to the project, also serve as public participation forums for state and federal permitting processes.

The reader should note, however, that concurrent with the EIS process, the Alaska Department of Natural Resources (DNR) has conducted a thorough review of Diamond Alaska's 27-volume application for a permit to conduct surface mining. This permit process, completed in August 1987, was conducted pursuant to the Alaska Surface Coal Mining Control and Reclamation Act (AS27.21, 11AAC Chapter 90), and Diamond Alaska's proposed 10-year mining plan than this EIS can reasonably accommodate. Through delegated authority, compliance with the state surface mining laws assures compliance with the federal laws governing surface mining under the Surface Mining Control and Reclamation Act. The EIS serves as an overall planning tool that addresses component siting and operations over the 34-year life of the project and beyond. While certain important aspects of the 10-year mining plan are discussed and analyzed in the EIS, the reader is encouraged to contact the DNR at the address shown on page 7-7 for information related to the surface mining permits.

Diamond Alaska is pursuing the full range of other permits and approvals required for their proposed project. Table 1-1 lists the major permits required and their current status. Superimposed on the individual permit application procedures are two more or less separate but interrelated environmental review processes. The first is the NEPA review process of which this EIS is a part. As discussed in Section 1.2, this EIS provides the background and documentation necessary for processing the major federal permits. In addition, the State of Alaska, through a centralized permit review process administered by the Office of Management and Budget (OMB), reviews all the state permits with individual regulatory agencies. Although each agency issues its own permits, permit decisions are coordinated through OMB on any projects which affect the State's coastal zone. OMB makes the final determination of consistency with the Alaska Coastal Management Program.

Table 1-1

STATUS OF MAJOR PERMITS AND APPROVALS

Project Component	Lease/Permit/Approval	Regulatory Agency	Application Submittal Date	Status
Prior to Alaska Coastal Management Program (ACMP)				
Transportation	night-of-nay Permit and Easement, ADL 200680 (to Granite Point) - joint application with Beluga Coal Company	ADNR (state)	July 12, 1978 Amended April 15. 1982	In adjudication
Port	Land Lease, ADL 66114 (Granite Point uplands) - Joint application with Beluga Coal Company	ADNR (state)	October 24, 1974 Amended November 25, 1981	In adjudication
Port	lids and Submerged Lands Lease, ADL 66115 (Granite Point) - Joint application with Beluga Coal Company	ADNR (date)	October 24, 1974 landed November 25. 1911	In adjudication
Alaska Coastal Management Program (ACMP) - Phase I; includes state permits for the mine, southern corridor and Granite Point port site.	AK860218-26A (Mine) AK860218-27A (Trans/Housing) AK860218-28A (Port)	OMB (state)		Consistency Determination, June 29, 1988
Mine	Permit to conduct surface mining, No. 01-85-796	ADNR/DOM	January 15, 1985	August 21, 1917. Positive Decision . June 28, 1988, Final Decision
Port	Water Rights. LAS No. 5558 (Granite Point)	ADNR/DLWM	February 7, 1986	Issued Sept. 29, 1988
Housing	Water Rights, LAS No. 55%	ADNR/DLWM	February 7, 1986	Issued Sept. 29, 1988
Mine	Water Rights, LAS No. 5557	ADNR/DLWM	February 7, 1986	Issued Sept. 29, 1988
Housing	Land Lease, ADL 221186 (includes solid water site)	ADNR/DLWM	May 16, 1985	In adjudication
Housing	Solid Waste Disposal Permit, No. 8623-BA003	ADEC	February 7, 1986	Issued Aug. 9, 1988
Transportation	Anadromous Fish Protection Permit. Title 16 (Granite Point, hwsing, landing strip)	ADF&G	February 7, 1906	Issued July 27, 1988
Mine	Land Lease, ADL 222752 (Permanent Solid Waste Disposal Site)	ADNR/DLWM	February 14, 1986	In adjudication
Mine	Solid Waste Disposal Permit, No. 8623-BA002 (Permanent Site)	ADEC	February 7, 1906	Issued Aug. 9, 1988
nine	Land Lease. ADL 222753 (Temporary Solid Waste Disposal Site)	ADNR/DLWM	February 14, 1986	In adjudication

Table 1-1

STATUS a MAJOR PERMITS AND APPROVALS
(continued)

Project Component	Lease/Permit/Approval	Regulatory Agency	Application Submittal Date	Status
Mine	Solid Waste Disposal Permit. No. 8623-BA001 (Temporary Site)	ADEC	February 7, 1986	Issued Aug. 9, 19M
Transportation/ Housing	Land Lease, ADL 221107 (Landing Strip)	ADNR/DLWM	May 16, 1985	In adjudication
Mine	Rights-of-Way (5 separate approvals for vegetation analysis plots)	ADNR/DLWM	May 16, 1985	Review in Progress
Mine	Anadromous Fish Protection Permit, Title 16	ADF&G	February 7, 1986	Issued July 27, 1908
Transportation	Material Sites, ADL 221188 through 221190 (3 sites)(Granite Point)	ADNR/DLWM	May 16, 1985	Review in Progress
Alaska Coastal Management Program (ACMP) - Phase II; includes MPA Process, federal approvals and state permits for Ladd		OMB (state)	June 9, 1988	Review in Progress
Mine	National Pollutant Discharge Elimination System (NPDES)(19 discharges)	U.S. EPA	Jlly 26. 1985 Amend	Under review - pending completion of the NEPA process
Port (Granite Point)	National Pollutant Discharge Elimination System (NPDES)(2 discharges)	U.S. EPA	July 26, 1985 Amend	Under review - pending completion of the NEPA process
Housing	National Pollutant Discharge Elimination System (NPDES)(3 discharges)	US. EPA	Jlly 26, 1985 Amend	Under review - pending completion of the NEPA process
Port (Ladd)	National Pollutant Discharge Elimination System (NPDES)(1 discharge)	US. EPA	January 1987	Under review - pending completion of tho NEPA process
Mine, Housing, Transportaton end both Ports	Department of the Army Permit (Sections 10 & 404)	COE	June 5, 1987 Revised	Under review - pending completion of the NEPA process
Mine, Housing, and both Port Sites	Certificate of Reasonable Assurance (Water Quality Certification)	ADEC	Review of NPDES Applications	Review in Progress

Table 1-1

STATUS OF MAJOR PERMITS AND APPROVALS
(continued)

Project Component	Lease/Permit/Approval	Regulatory Agency	Application Submittal Date	Status
Transportation	Right-of-Way Permit and Easement, ADL 223706 (Ladd)	ADNR/DLWM	June 5, 1987	In adjudication
Port	Tide and Submerged Lands Lease, ADL 223707 (Ladd)	ADNR/DLWM	June 5, 1987	In adjudication
Port	Water Rights, LAS No. to be assigned (Ladd)	ADNR/DLWM	June 5, 1987	Review In Progress
Transportation	Material Sites, ADL 223708 through 223717 (10 sites)(Ladd)	ADNR/DLWM	June 5, 1987	Review In Progress
Transportation	Anadromous Fish Protection Permit, Title 16 (Ladd)	ADF&G	June 5, 1987	Review in Progress
Port	Wastewater Disposal Permit (Ladd)	ADEC	June 5, 1987	Review In Progress
Alaska Coastal Management Program - Phase III; includes air quality permits and other approvals		OMB (state)		Review In Progress
Transportation	Right-of-Way Easement	KPB	April 24, 1987	In adjudication
Mine, Port & Housing	Plan review for sewerage systems of water and wastewater treatment works	ADEC	---	Review in Progress
Mine, Housing, Transportation and Part	Air Quality Control Permit to Operate	ADEC	December 1986 Amended	Review in Progress
Mine	Miscellaneous Burning Permits		---	To be submitted